



Appl. No. 10 520 571  
Paper, dated July 20, 2007  
Reply to Office action mailed June 28, 2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

)  
**LIM ET AL**)  
)  
**SERIAL NO. 10 520 571**)      Art Unit: 1714  
)  
**FILED: JANUARY 7 2005**)      Examiner: SZEKELY, P. A.  
)  
**FOR: FLAME RETARDANT**)      Docket No: DKC 1775  
**THERMOPLASTIC RESIN**)  
**COMPOSITION**)  
)

**Commissioner for Patents**  
**Alexandria, VA 22313**

AMENDED BRIEF

In response to the Notification of Non-Compliant Appeal Brief, Applicants enclose an amended brief in which the identification of claims being appealed has been added to the Status of Claims section. A concise explanation of the subject matter of independent claim 5 with reference to page number in the specification has been added to the Summary of Claimed Subject Matter section.

Respectfully submitted,

LIM ET AL

BY

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313  
on this 20<sup>th</sup> day of July 2007

By *Maria Parrish Tungol*

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## PATENT

### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

LIM ET AL	)	
SERIAL NO. 10 520 571	)	Art Unit: 1714
FILED: JANUARY 7 2005	)	Examiner: SZEKELY, P. A.
FOR: FLAME RETARDANT	)	Docket No: DKC 1775
THERMOPLASTIC RESIN	)	
COMPOSITION	)	

Commissioner for Patents  
Alexandria, VA 22313

### AMENDED APPEAL BRIEF

This is an appeal of the Primary Examiner's Final rejection of claims 1-6.

#### REAL PARTY IN INTEREST

The real party in interest is the Assignee of the entire interest, Cheil Industries Inc.

#### RELATED APPEALS AND INTERFERENCES

There are two commonly owned applications which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal. An Appeal Brief was filed in Serial No. 10 489 545, filed March 12, 2004. An Appeal Brief is being concurrently filed in Serial No. 10 520 842, filed January 10, 2005.

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By \_\_\_\_\_

~P3L

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## STATUS OF CLAIMS

Claims 1-6 stand rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. Claims 1-6 also stand rejected under 35 U.S.C. §112, first paragraph as failing to comply with the enablement requirement. This is an appeal of the Primary Examiner's Final rejection of claims 1-6.

## STATUS OF AMENDMENTS

No amendment was filed subsequent to final rejection.

## SUMMARY OF CLAIMED SUBJECT MATTER

The independent claims are claims 1 and 5. Claim 1 is directed to a flame retardant thermoplastic resin composition that comprises a polycarbonate resin, a rubber modified vinyl-grafted copolymer, an optional vinyl copolymer, a monomeric phosphoric acid ester, an oligomeric phosphoric acid ester, and a fluorinated polyolefin resin (see specification, page 3, lines 2-7). Independent claim 5 is directed to a flame retardant thermoplastic resin composition that comprises a polycarbonate resin, a rubber modified vinyl-grafted copolymer, an optional vinyl copolymer, a monomeric phosphoric acid ester, an oligomeric phosphoric acid ester, and a fluorinated polyolefin resin (see specification, page 12, lines 5-9). In claims 5 and 6, the monomeric phosphate ester contains at least one naphthyl group when x is 1 or more. The compositions of the present invention show a good balance of physical properties such as impact strength, heat resistance, heat resistance, thermal stability, processability and appearance.

## GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-6 are unpatentable under 35 U.S.C. §112, first paragraph for failing to meet the written description requirement and for failing to meet the enablement requirement.

The specification as filed and original claim 1 recited that rubber modified vinyl graft

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copolymer, (B), was prepared by graft-polymerizing (B-1), "a monomer mixture consisting of about 50 to 95 % by weight of" styrene monomers and others and about 5 to 50 % by weight of other monomers, onto (B-2). The phosphoric acid esters were recited as (D), a mixture "consisting of" components (D-1) and (D-2) in the specification and original claim 1.

Applicants' specification does not describe the exclusion of other monomers or compounds in (B-1) and (D) as being essential or critical to the operation or patentability of the claimed invention. There is nothing in the specification which teaches that other monomers could not be used included in the monomer mixture of (B-1) or that other compounds could not be used in the mixture of component (D). In fact, the specification teaches that other phosphoric acid flame retardants could be included in the claimed compositions (see specification page 12, lines 6-7).

Claim 1 was amended to replace the term "consisting" with "comprising" in the recitation of component (B-1) and component (D). After rejection by the Examiner, the term "comprising" was deleted in the last Amendment. Amendment of the specification deleting "consisting" was objected to by the Examiner.

In the Final rejection, the Examiner rejected claims 1-6 as being unpatentable under 35 U.S.C. §112, first paragraph for failing to meet the written description requirement stating:

The removal of the phrase "consisting of" from original claim 1 broadens the scope of the claim and accordingly is new matter. The deletion of the word "comprised" does not restore the original meaning and for this reason it is not equivalent of "consisting of". There was no antecedent basis in the original specification for the wording used in newly amended claim 1... Claims 5 and 6 are new matter because there was no antecedent basis in the original specification of parts (B-1) and (D-1) without the phrase "consisting of" and the claims are therefore broader than the original specification

Claims 1-6 were also rejected as being unpatentable under 35 U.S.C. §112, first paragraph for failing to meet the enablement requirement because:

The original specification restricted ingredients (B-1) and (D-1) using the closed language "consisting of". The open language permits the presence of other ingredients, which is not enabled by the original specification.

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The Examiner did not present any evidence or technical reasoning to show why a person skilled in the art would not recognize in Applicants' disclosure a description of the invention defined by the claims. The Examiner did not identify any subject matter in the claims which was not described in the specification. The Examiner did not present any evidence or technical reasoning to show that one skilled in the art could not make or use the claimed invention from the disclosures in the patent coupled with information known in the art without undue experimentation. The Examiner did not specifically respond to the arguments presented in the Amendment dated June 13, 2006.

## ARGUMENT

### **Rejection under 35 U.S.C. §112, first paragraph for failing to meet the written description requirement**

The inquiry into whether the description requirement is met must be determined on a case-by-case basis and is a question of fact. *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).

The Examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The Examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

**The Examiner has not provided any evidence or technical reasoning why one skilled in the art would not have recognized that the Applicants were in possession of the invention as claimed in view of the disclosure as filed.**

The Examiner's statements that "[T]he removal of the phrase "consisting of" from original claim 1 broadens the scope of the claim" and "deletion of the word 'comprised' does not restore the original meaning and for this reason it is not equivalent of 'consisting of'" do not address the issue, i.e., why one skilled in the art would not have recognized that the Applicants were in

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possession of the invention as claimed. The disclosure and the examples all disclose component (B-1) and component (D) as claimed. There is nothing in the specification which would teach one skilled in the art that other monomers could not be included in either the mixtures of (B-1) and (D). The ordinary meaning of "consisting of" (e.g., "made up of") when used in a specification does not have the restrictive legal meaning given to the term when used in the *claims* of a U.S. patent application. Applicants' specification does not describe the exclusion of other monomers or compounds in (B-1) and (D) as being essential or critical to the operation or patentability of the claimed invention.

A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. The Examiner failed to present any technical reasons why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims.

The Examiner statement that "[T]here was no antecedent basis in the original specification for the wording used in newly amended claim 1" and "there was no antecedent basis in the original specification of parts (B-1) and (D-1) without the phrase "consisting of" and the claims are therefore broader than the original specification" also fail to address the issue. The term, "consisting" was deleted in the claims. The specification contains the remaining wording of the amended claims. Whether the claims are "broader" than the specification is not relevant to the issue of the adequacy of the written description.

**The removal of an unnecessary limitation does not violate the written description requirement. *In re Peters*, 723 F.2d 891, 221 USPQ 952 (Fed. Cir. 1983)**

Applicants submit that one skilled in the art would recognize that there was no reason why Applicants' invention requires the limitation of excluding all monomers for component (B-1) other than those recited in claim 1. The removal of an unnecessary limitation does not violate the written description requirement. *In re Peters*, 723 F.2d 891, 221 USPQ 952 (Fed. Cir. 1983) (In a reissue application, a claim to a display device was broadened by removing the limitations directed to the specific tapered shape of the tips without violating the written description requirement. The shape limitation was considered to be unnecessary since the specification, as

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filed, did not describe the tapered shape as essential or critical to the operation or patentability of the claim). Applicants' specification does not describe the exclusion of other monomers or compounds in (B-1) and (D) as being essential or critical to the operation or patentability of the claimed invention.

Deletion of the term "consisting" does not add any new and substantive information which might change the invention. Deletion of "consisting" does not add any new and substantive information to the specification or the claims. Under U.S. patent practice, the use of the term "consisting" in original claim 1 excludes all monomers from the monomer mixture used to produce component (B-1). There is nothing in Applicants' specification which discloses that all monomers other than those recited for component (B-1) must be excluded from the monomer mixture used to produce component (B-1). The Examiner does not dispute that the rubber modified vinyl copolymer of component (B-1) is well known in the art. What is conventional or well known to one of ordinary skill in the art need not be disclosed in detail (*Capon v. Eshhar*, 418 F.3d 1349, 1357, 76 USPQ2d 1078, 1085 (Fed. Cir. 2005)(“The ‘written description’ requirement must be applied in the context of the particular invention and the state of the knowledge. . . . As each field evolves, the balance also evolves between what is known and what is added by each inventive contribution”).

The claimed compositions are described in the specification. If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met. (*Martin v. Johnson*, 454 F.2d 746, 751, 172 USPQ 391, 395 (CCPA 1972) (stating “the description need not be *in ipsis verbis* to be sufficient”). The specification describes each of the components of the claimed compositions and the monomers which can be used for component (B-1). Applicants are not required to describe all *additional* monomers which one skilled in the art could readily determine to be useful in component (B-1).

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**Rejection under 35 U.S.C. §112, first paragraph for failing to meet the enablement requirement.**

The Examiner has not identified any subject matter in the amended claims which was not described in the specification in such a way as to enable one skilled in the art to which it pertains to make and/or use the invention. The claims do not recite any components which are not described in the specification. As stated previously, the ordinary meaning of “consisting of” (e.g., “made up of”) when used in a specification does not have the restrictive legal meaning given to the term when used in the *claims* of a U.S. patent application. The Examiner’s statement that “[T]he open language permits the presence of other ingredients, which is not enabled by the original specification” is not supported by any evidence, including the specification. Applicants’ specification does not describe the exclusion of other monomers or compounds in (B-1) and (D) as being essential or critical to the operation or patentability of the claimed invention. In U.S. patent applications, very few claims reciting a mixture use the term “consisting of” unless the exclusion is essential to patentability. The vast majority of claims in U.S. patent applications omit the term and therefore are “open” to components other than those specifically recited. Under the Examiner’s erroneous standard of enablement, claims that do not use “consisting” would not meet the enablement requirement since the claims would be open to other elements which are not specifically disclosed in the specification.

In the Final rejection, the Examiner did not address the issue of undue experimentation in the rejection relating to enablement. The Examiner did not present any evidence or technical reasoning to show that one skilled in the art could not make or use the claimed invention from the disclosures in the patent coupled with information known in the art without undue experimentation. The Examiner did not dispute that component (B) is well known. The Examiner did not address Applicants’ arguments regarding the disclosure of other phosphoric acid flame retardants in the specification. Applicants submit that one skilled in the art could make and use the invention as presently claimed without undue experimentation. Again, the ordinary meaning of “consisting of” when used in a specification does not have the restrictive legal meaning given to the term when used in the *claims* of a U.S. patent application. Applicants’ specification does

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not describe the exclusion of other monomers or compounds in (B-1) and (D) as being essential or critical to the operation or patentability of the claimed invention. Given Applicants' disclosure, one skilled in the art could determine which monomers could be used in component (B-1) and which compounds could be used in the mixture of component (D) without undue experimentation.

**Applicants originally claimed less than they had a right to claim by inadvertently using a term in the claims which has a meaning which is peculiar to U.S. patent practice**

The amendment to remove the term "consisting" removes unnecessary limitations and obvious error whereby Applicants originally claimed less than they had a right to claim by inadvertently using a term in the claims which has a meaning which is peculiar to U.S. patent practice. The amendment removing the term "consisting" was for the purpose of clarifying what is inherently disclosed in the specification regarding *well known* rubber modified graft copolymers. The specification also discloses that other phosphoric acid flame retardants can be used in the claimed invention so the limitation of component (D) is obviously an error.

The use of the term "consisting" in the specification and claim 1 was made in error. As discussed previously, the copolymers of component (B) are well known in the art. The present application is based on a patent application which was written and filed in another country in a non-English language. The error in the claims was corrected in the U.S. national stage application prior to examination. An amendment to correct an obvious error does not constitute new matter where one skilled in the art would not only recognize the existence of the error in the specification, but also recognize the appropriate correction. *In re Oda*, 443 F.2d 1200, 170 USPQ 268 (CCPA 1971).

Applicants submit that the Examiner erred in rejecting the claims as being unpatentable under 35 U.S.C. §112, first paragraph for failing to meet the written description and the enablement requirements. The Examiner has failed to support his position by either evidence or

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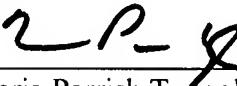
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technical reasoning. Applicants respectfully request reversal of the Examiner's rejections under 35 U.S.C. §112.

Respectfully submitted,

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## CLAIMS APPENDIX

Claim 1. A flame retardant thermoplastic resin composition comprising:

(A) 45 to 95 parts by weight of a thermoplastic polycarbonate resin;

(B) 1 to 50 parts by weight of a vinyl graft copolymer prepared by graft-polymerizing 5 to 95 parts by weight of a monomer mixture of (B-1.1) 50 to 95 by weight of at least one styrene,  $\alpha$ -methylstyrene, halogen- or alkyl-substituted styrene,  $C_{1-8}$  methacrylic acid ester, or  $C_{1-8}$  acrylic acid alkyl ester and (B-1.2) 5 to 50 parts by weight of at least one acrylonitrile, methacrylonitrile,  $C_{1-8}$  methacrylic acid alkyl ester,  $C_{1-8}$  acrylic acid alkyl maleic acid anhydride, or  $C_{1-4}$  alkyl- or phenyl N-substituted maleimide onto (B-2) 5 to 50 parts by weight of a rubber polymer selected from the group consisting of butadiene, acryl rubber, ethylene-propylene rubber, styrene-butadiene rubber, acrylonitrile-ethylene rubber, isoprene rubber, copolymer of ethylene-propylene-diene (EPDM), organosiloxane-polyalkyl (meth)acrylate rubber complex and a mixture thereof;

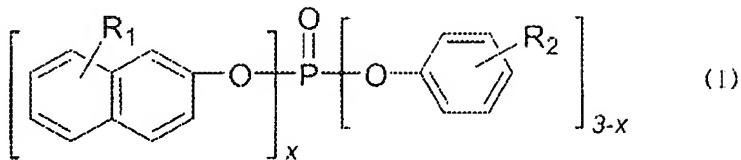
(C) 0 to 50 parts by weight of a vinyl copolymer or a mixture of vinyl copolymer selected from (C-1) 50 to 95 parts by weight of at least one of styrene,  $\alpha$ -methyl styrene, halogen or alkyl substituted styrene,  $C_{1-8}$  methacrylic acid alkyl ester or  $C_{1-8}$  acrylic acid alkyl ester and (C-2) 5 to 50 parts by weight of at least one of acrylonitrile, methacrylonitrile,  $C_{1-8}$  methacrylic acid alkyl ester,  $C_{1-8}$  acrylic acid alkyl ester, maleic acid anhydride, or  $C_{1-4}$  alkyl phenyl N-substituted maleimide;

(D) 1 to 30 parts by weight of a mixture of organic phosphorous compounds (D-1) 5 to 50 parts by weight of a monomeric phosphoric acid ester compound represented by the following Formula (I) or a mixture thereof and (D-2) 95 to 5 parts by weight of an oligomeric phosphoric acid ester compound represented by the following Formula (II) or a mixture thereof, 50 parts by weight of the sum of (A), (B) and (C):

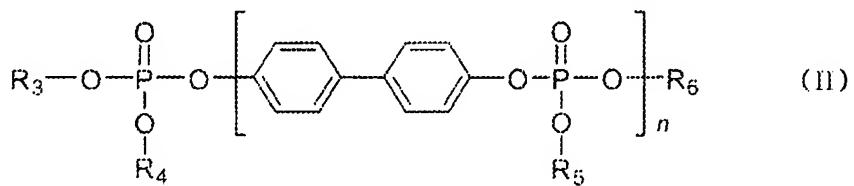
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wherein R<sub>1</sub> and R<sub>2</sub> are independently hydrogen or a C<sub>1-5</sub> alkyl group and x is 0 or an integer from 1 to 3,



wherein R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are independently a C<sub>6-20</sub> aryl group or an alkyl-substituted C<sub>6-20</sub> aryl group, respectively, and n is an integer representing the number of repeating units from 1 to 5, the average value of n in the mixture of oligomeric phosphoric acid ester is 1 to 3; and

(E) 0.05 to 5.0 parts by weight of a fluorinated polyolefin resin with average particle size of 0.05 to 1,000  $\mu\text{m}$  and density of 1.2 to 2.3 g/cm<sup>3</sup>, per 100 parts by weight of (A)+(B)+(C).

Claim 2. The flame retardant thermoplastic resin composition as defined in claim 1, wherein said R<sub>1</sub> and R<sub>2</sub> are independently hydrogen or alkyl group in which alkyl is methyl, ethyl, isopropyl or t-butyl.

Claim 3. The flame retardant thermoplastic resin composition as defined in claim 1, wherein said R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are independently phenyl group, naphthalene group, or alkyl-substituted phenyl group in which alkyl is methyl, ethyl, isopropyl and t-butyl.

Claim 4. A molding article produced from the flame retardant thermoplastic resin composition as defined in claim 1.

Claim 5. A flame retardant thermoplastic resin composition comprising:

(A) 45 to 95 parts by weight of a thermoplastic polycarbonate resin;

(B) 1 to 50 parts by weight of a vinyl graft copolymer prepared by graft-polymerizing (B-1) 5 to 95 parts by weight of a monomer mixture of (B-1.1) 50 to 95 by weight of at least one of styrene,  $\alpha$ -methylstyrene, halogen- or alkyl-substituted styrene,  $C_{1-8}$  methacrylic acid alkyl ester, or  $C_{1-8}$  acrylic acid alkyl ester and (B-1.2) 5 to 50 parts by weight of at least one of acrylonitrile, methacrylonitrile,  $C_{1-8}$  methacrylic acid alkyl ester,  $C_{1-8}$  acrylic acid alkyl ester, maleic acid anhydride, or  $C_{1-4}$  alkyl- or phenyl N-substituted maleimide onto (B-2) 5 to 95 parts by weight of a rubber polymer selected from the group consisting of butadiene rubber, acryl rubber, ethylene-propylene rubber, styrene-butadiene rubber, acrylonitrile-butadiene rubber, isoprene rubber, copolymer of ethylene-propylene-diene (EPDM), polyorganosiloxane-polyalkyl (meth)acrylate rubber complex and a mixture thereof;

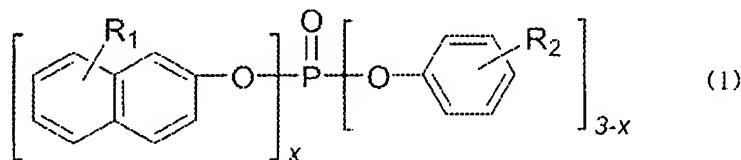
(C) 0 to 50 parts by weight of a vinyl copolymer or a mixture of vinyl copolymer prepared from (C-1) 50 to 95 parts by weight of at least one of styrene,  $\alpha$ -methyl styrene, halogen or alkyl substituted styrene,  $C_{1-8}$  methacrylic acid alkyl ester or  $C_{1-8}$  acrylic acid alkyl ester and (C-2) 5 to 50 parts by weight of at least one of acrylonitrile, methacrylonitrile,  $C_{1-8}$  methacrylic acid alkyl ester,  $C_{1-8}$  acrylic acid alkyl ester, maleic acid anhydride, or  $C_{1-4}$  alkyl or phenyl N-substituted maleimide;

(D) 1 to 30 parts by weight of a mixture of organic phosphorous compounds (D-1) 5 to 95 parts by weight of a monomeric phosphoric acid ester compound represented by the following Formula (I) or a mixture thereof and (D-2) 95 to 5 parts by weight of an oligomeric phosphoric acid ester compound represented by the following Formula (II) or a mixture thereof, per 100 parts by weight of the sum of (A), (B) and (C):

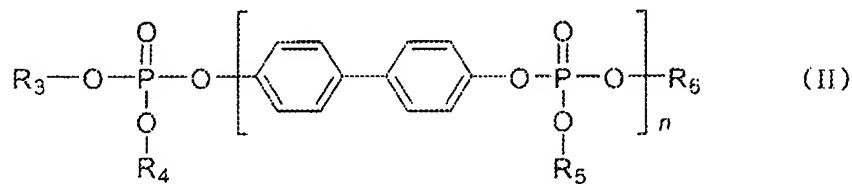
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wherein R<sub>1</sub> and R<sub>2</sub> are hydrogen and x is 1 or 2,



wherein R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are phenyl groups and n is an integer representing the number of repeating units from 1 to 5, the average value of n in the mixture of oligomeric phosphoric acid ester is 1 to 3; and

(E) 0.05 to 5.0 parts by weight of a fluorinated polyolefin resin with average particle size of 0.05 to 1,000  $\mu\text{m}$  and density of 1.2 to 2.3 g/cm<sup>3</sup>, per 100 parts by weight of (A)+(B)+(C).

Claim 6. A molding article produced from the flame retardant thermoplastic resin composition as defined in claim 5.

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EVIDENCE APPENDIX

NONE

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#### RELATED PROCEEDINGS APPENDIX

To date, no Board decision has been issued in the appeal in copending Serial No 10 489 545.

Likewise, no Board decision has been issued in the appeal in copending Serial No. 10 520 842 being filed concurrently with the present Brief.